Global Information Connectivity

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Space Policy & Architecture Symposium

Col William Gardner, SMC/XR

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william.gardner@losangeles.af.mil

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Outline

- Current National Satcom Activity
- Effects-based warfare
- Satcom Architecture
- Multi-mission concepts
- Summary

Current National Satcom Activity

- Program Decision Memorandum (PDM) IV
  - Two new Satcom systems
    - National Strategic Satellite System
    - Advanced Wideband System
  - Development of laser communication technology
  - Directs comprehensive study (Transformational Communication Study)
- Architectural Decision Memorandum
  - Compatibility with Global Information Grid
  - Packet switched architecture
- MILSATCOM Joint Program Office Program Research and Development Agreement Activity
  - Involvement from two industry teams (Mar-Jun 2002)

The Kill Chain . . .

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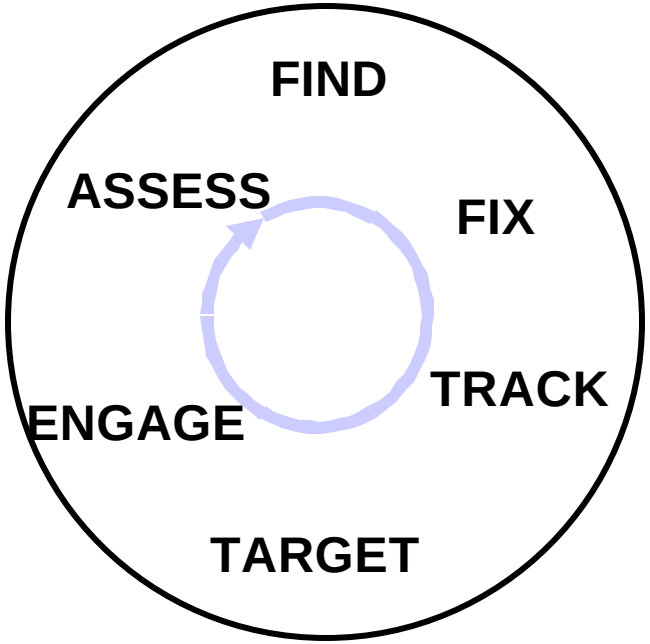
Today

Effects-Based Warfare

Future

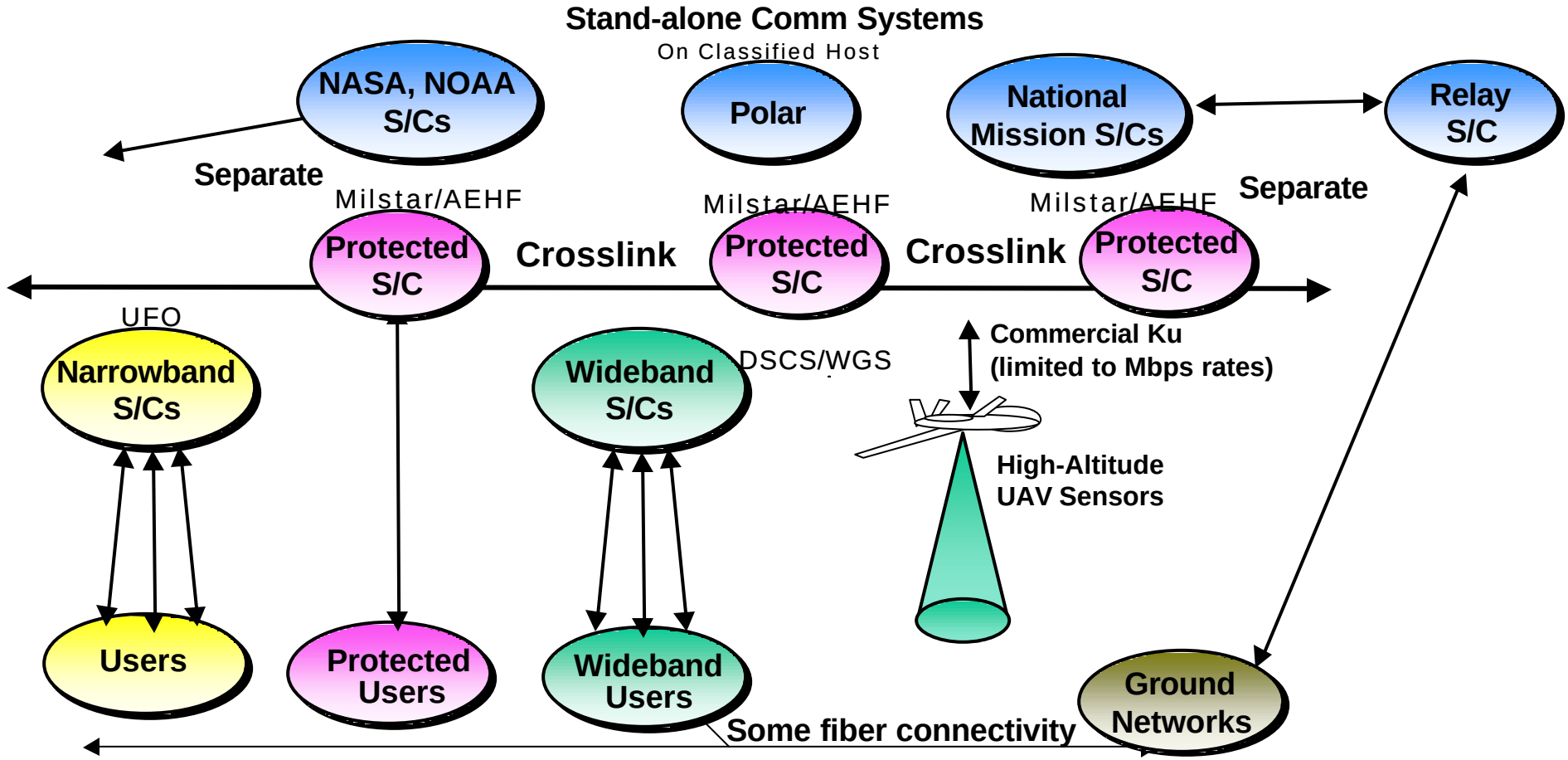


- Stovepipe processes
- Low automation
- High sustainment costs
- Low Density / High Demand problem
- Longer standoff ranges required

- Seamless processes
- High automation
- Reduced sustainment costs
- Designed for continuous deployment
- Reduced operator risk

Seamless Global interconnectivity supports effects-based warfare

SATCOM Today: Mission Specific & Stove-piped



- Stand-alone systems; not well inter-networked
- Limited bandwidth to most airborne platforms

Source: SAF/AQSE Brief

SATCOM Tomorrow
Enduring Enterprise

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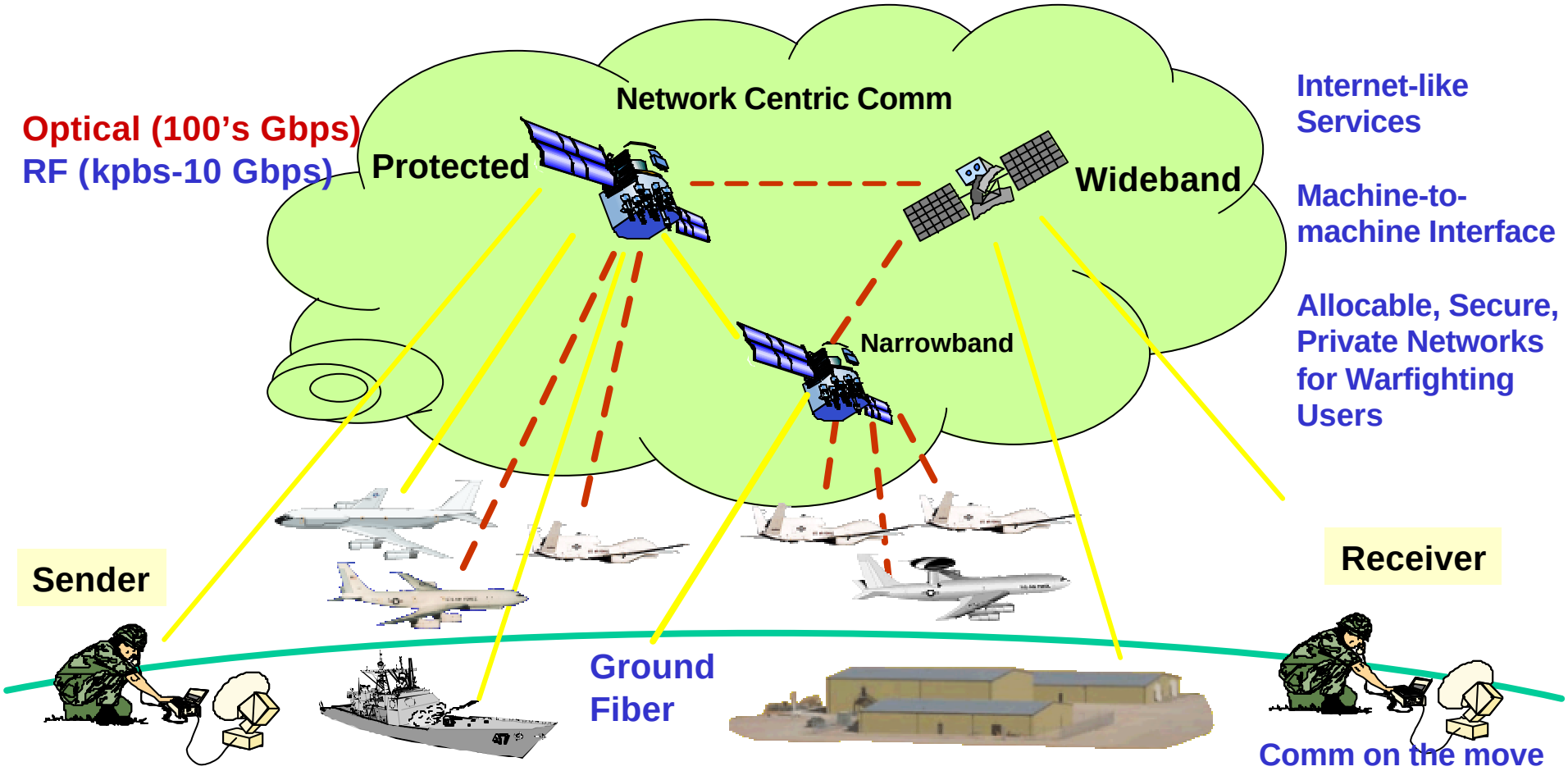

Bandwidth on demand

Source: SAF/AQSE Brief

TCS
Four Wideband Families

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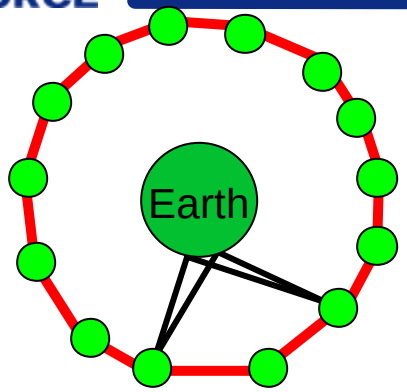
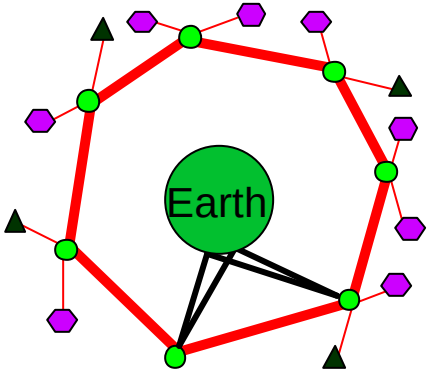
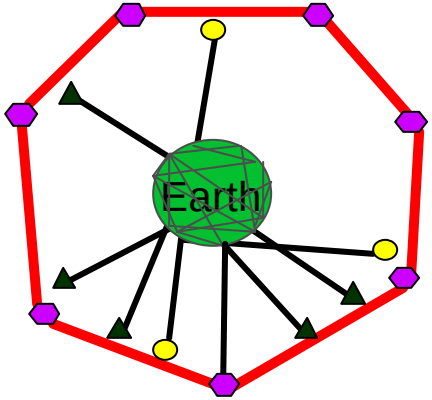


#1: Space Backbone Consolidated with Edge Services

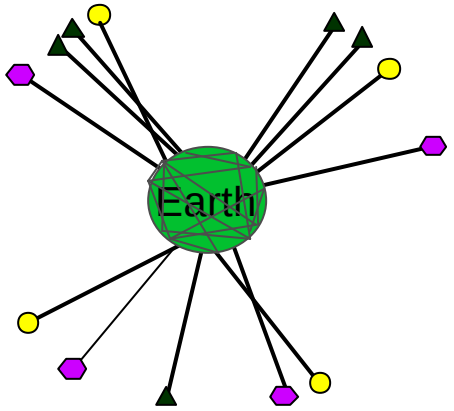


#2: Single Backbone/ Distributed Edge Services

Satellite Count TBD



#3: Distributed Edge Systems w/ Internal Backbones



#4: Terrestrial Backbone/ Distributed Edge

Integrated C2ISR is the end state…

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Key Platforms

- JSTARS
- AWACS
- MC2A
- Rivet Joint
- Global Hawk
- Predator
- U-2
- KE-X
- SBR
- DSP/SBIRS
- NTM
- ABL
- DMSP

Seamless Capabilities

- GMTI
- AMTI
- ELINT
- COMINT
- MASINT
- IMINT

System Engineering & Integration

System Engineering & Integration

Integrated ISR COP

- Fused target picture
- Automated target recognition
- Target tracking
- Positive target ID
- Mensurated coordinates
- Warnings and indicators
- Situational awareness
- Pred Battlespace Awareness

COMMAND & CONTROL

AOC /BCS MC2A

NCCT

New Goal

GPS/ MILSTAR

TBMCS/ SBMCS/ DCGS/ GCCS

CDL/MP-CDL/SCDL/Link 16

DSCS/ COMSAT

Global Information Grid

Effects-Based Acquisition of Integrated Capabilities

Global Multi-Mission Satellite Platform Concept

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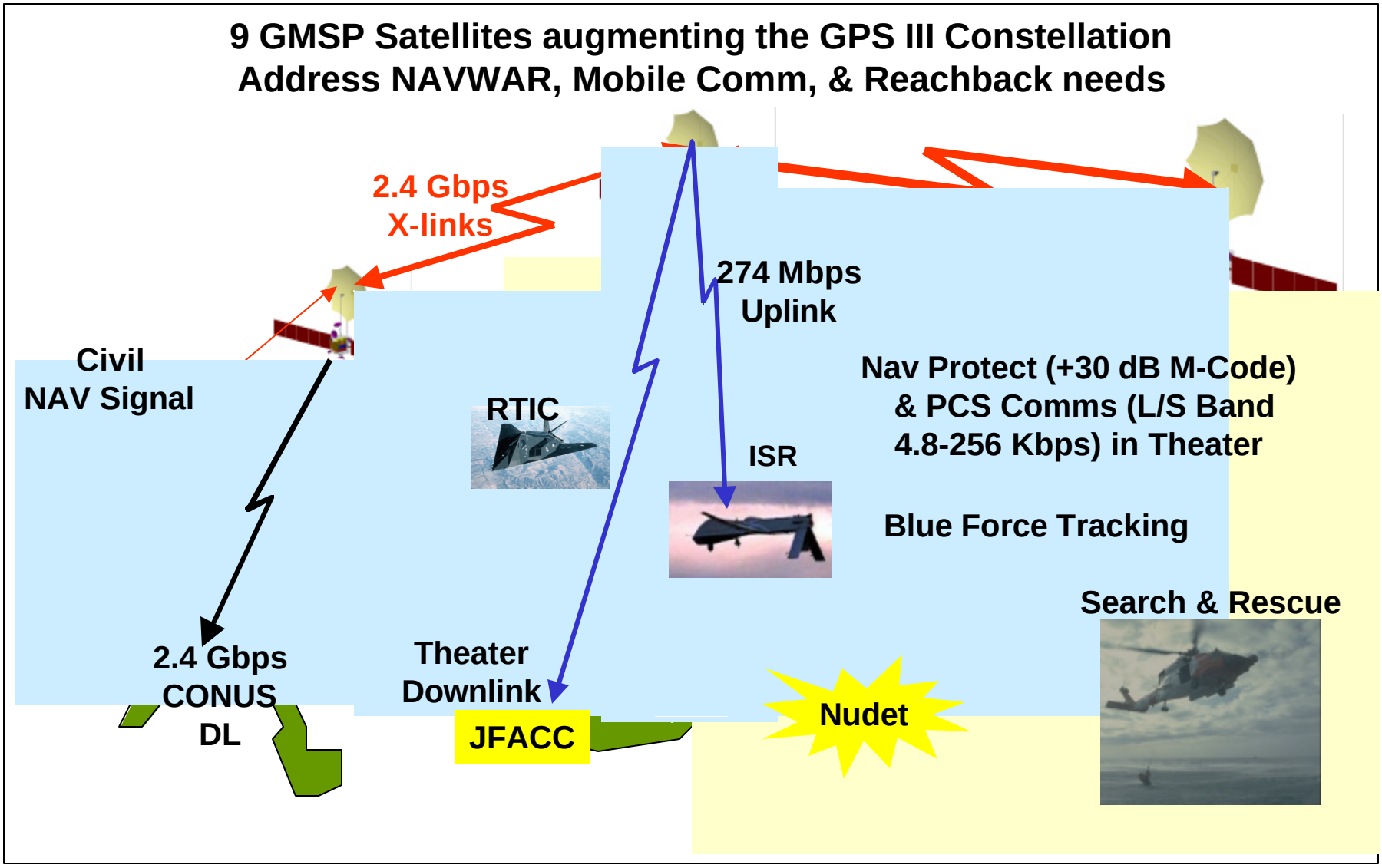
9 GMSP Satellites augmenting the GPS III Constellation
Address NAVWAR, Mobile Comm, & Reachback needs



Large Aperture Satellite Concept

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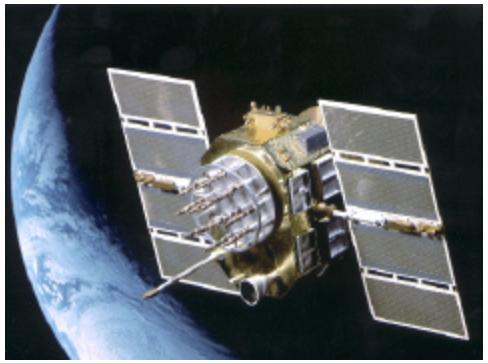
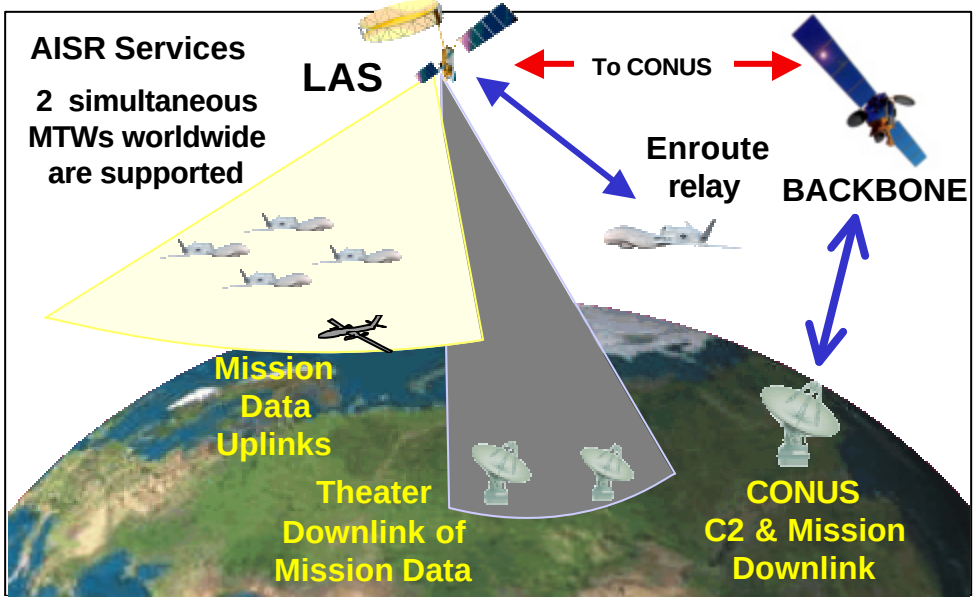
–Supports AFSPC missions:

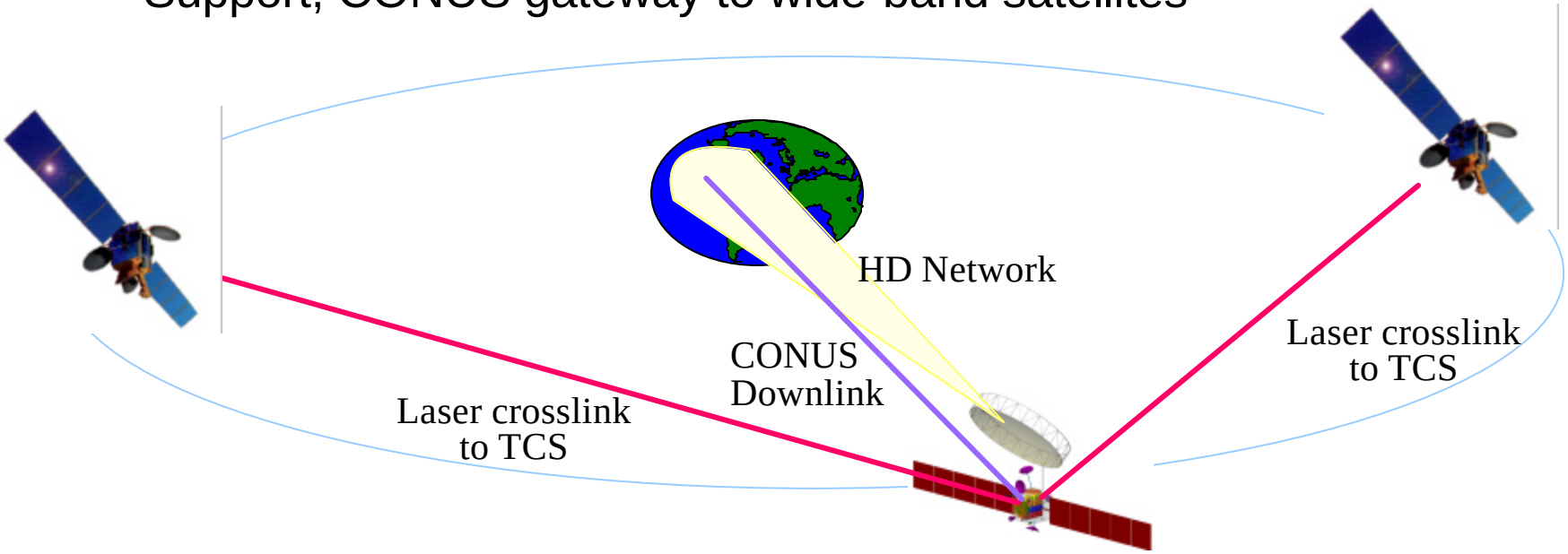
- Space forces support
  - –SLRS
  - –Continuous C^2 contacts (LEO – MEO)
  - –Mission Data Relay
- Space Control
  - –Real-time C^2
  - –Mission Data Relay
- Force enhancement
  - –ANS augmentation
  - –AISR C^2 and data relay
  - –Wide-band theater dissemination comms
- Force applications

Pre-Launch/Boost Phase - LV Telemetry (SLRS) - SV Telemetry (AFSCN)	Transfer Orbit Phase - LV Telemetry (SLRS) - SV Telemetry and Command (AFSCN)	On-Orbit Operations Phase	
		Nominal Operations - SV Telemetry and Command (AFSCN)	Anomaly Resolution - SV Telemetry and Command (AFSCN)
			



U.S. Emergency Response Satellite (USERS) Concept

- GEO augmentation of line-of-site and cellular (3G) networks across Homeland Defense agencies and jurisdictions
- Integrated in future space networks (TCS, WAAS)
- Missions: Homeland Defense Network, Space Lift Range Support, CONUS gateway to wide-band satellites



USERS connects federal, state, local agencies, and First Responders

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Summary

- Effects-based thinking is in
- Transformation from stove-piped communications to global interconnectivity is underway
- DoD, Intelligence, and Civil communities are major stakeholders